

Stillaguamish Clean Water District Water Quality Update – 2016 Shellfish Dinner



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Snohomish County
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Good afternoon. Nice day for a swim in a local river. Show of hands – how many of you have ever been swimming or wading in the Stillaguamish River or a nearby stream? Have you thought about what's in the water?

As evidenced by the show of hands –you appear to value clean water for recreation and general quality of life.

As Executive Somers and Surface Water Management Director Will Hall emphasized, protection and restoration of waters is vital to Snohomish County's mission.

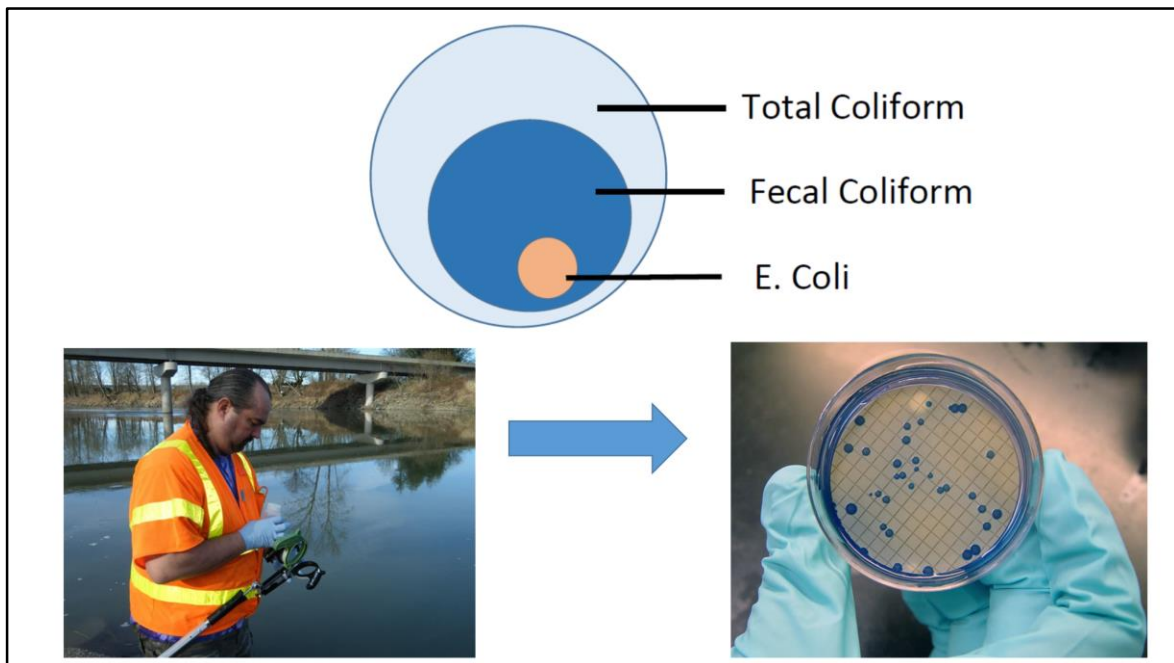
My name is Steve Britsch and I manage surface water quality monitoring programs for Snohomish County Public Works. Our programs track conditions of area streams and rivers and when we find problems we try to fix them.

One of the more significant pollution problems we deal with in the Stillaguamish River and nearby streams is fecal coliform bacteria.

My goal today

- What are fecal coliform?
- Where do fecal coliform come from?
- What are the fresh water quality standards?
- What we do to protect surface waters from fecal coliform pollution?

My goal today is to help provide an understanding of what fecal coliform bacteria are, where they come from, what the fresh water quality standards are and how we identify opportunities to protect surface waters from fecal coliform pollution.

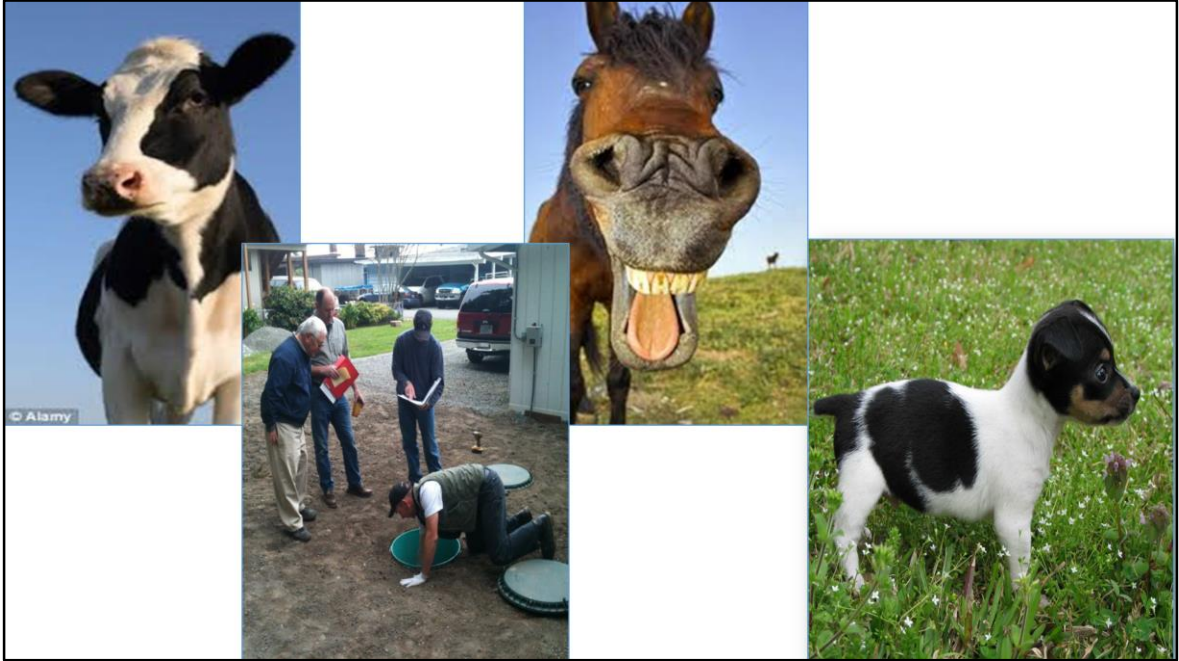


Fecal coliform are a group of bacteria, including E.coli, found in the waste of warm blooded animals.

They are identified in water through sampling. Samples are sent to a lab where they are filtered, incubated and the colonies are counted.

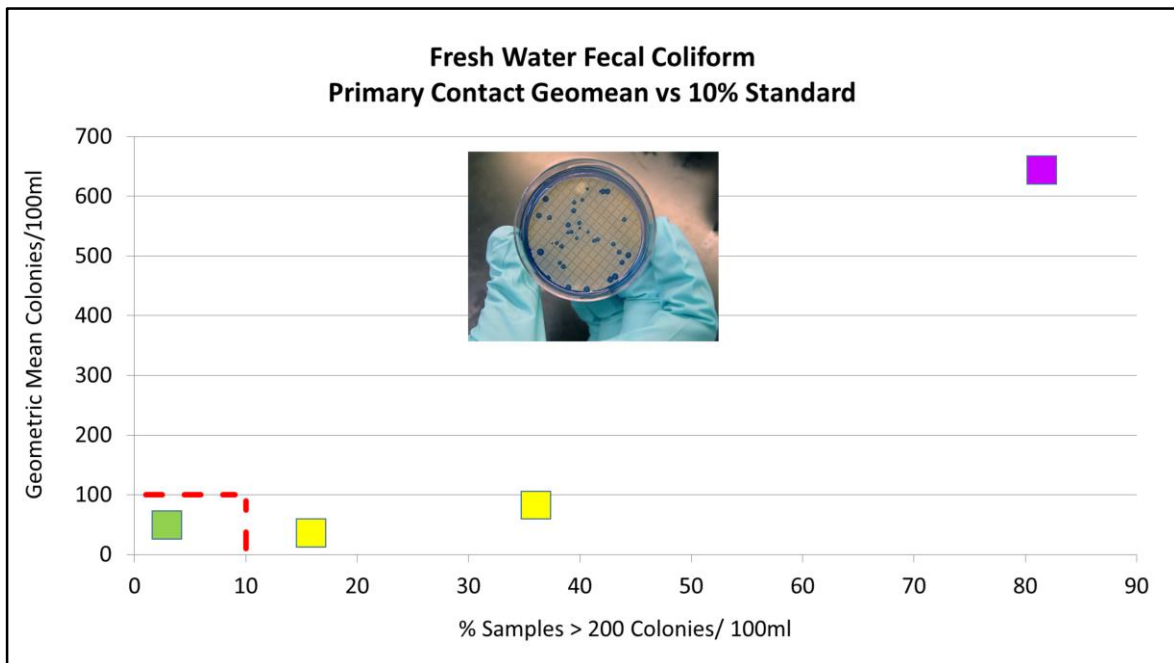
The higher the number of colonies the greater the risk that you or your animals could get sick from viruses such as hepatitis or dysentery if you have contact with those waters.

In the Stillaguamish basin.....next slide.



The primary sources we try and correct come from cattle, human waste from failed septic systems, horses and yes even cute puppies.

To protect the public.....next slide.

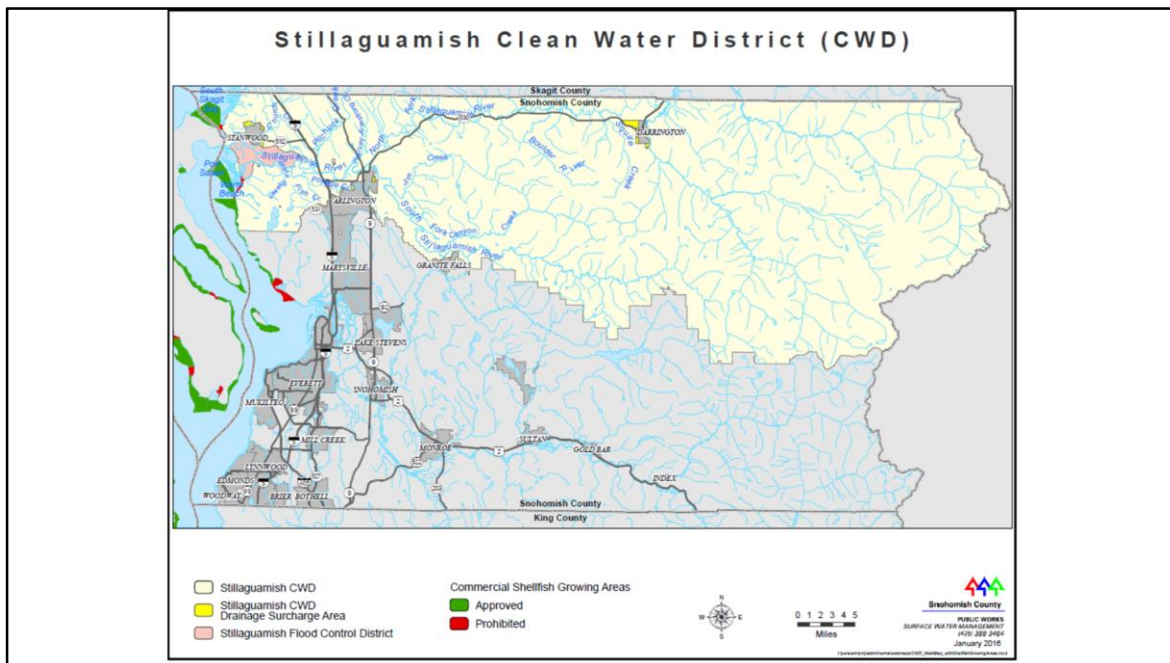


The Washington State Department of Ecology has established fresh water quality standards for fecal coliform bacteria. I'm going to use this graph to visually explain the standards that apply to most waters within the Stillaguamish basin and Clean Water District.

The Y axis represents the average fecal coliform colonies allowed at a location, where the average is not allowed to exceed 100. The X axis represents the % of colonies above 200 colonies, where standards do not allow more than 10% of samples to exceed 200 colonies.

The **green square** represents a sample location where both parts of the standard are met - where the average of all samples gathered at that location is less than 100 fecal coliform colonies and fewer than 10 percent of those samples exceeded 200 colonies. This is where we want to see bacteria levels.

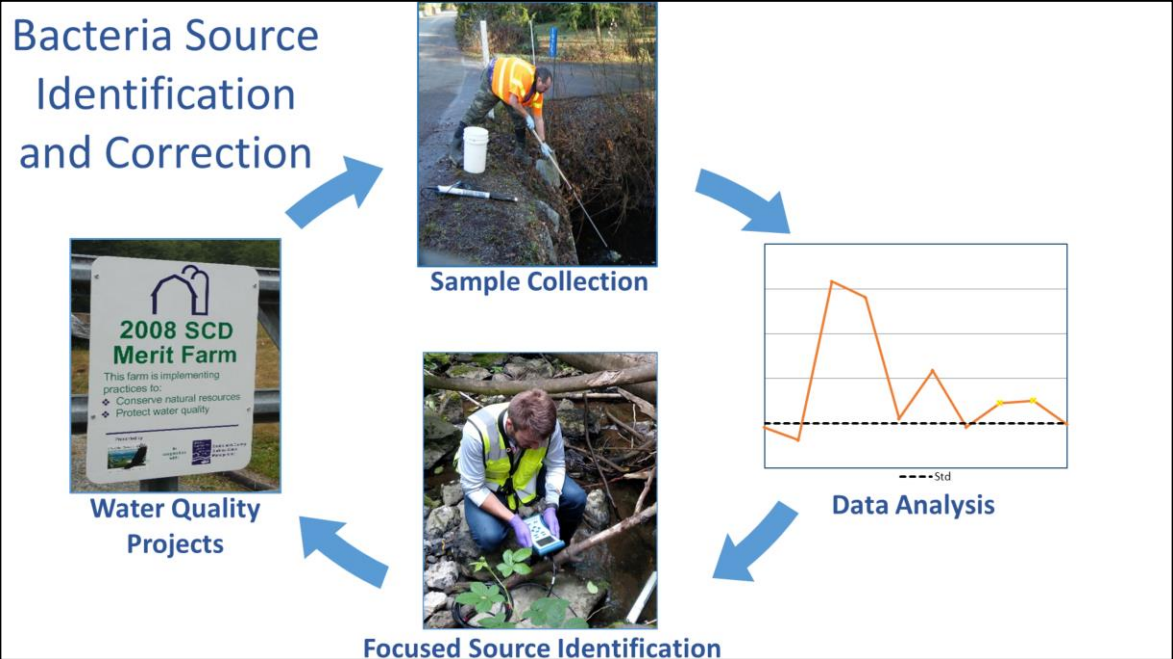
Those **yellow squares** represent sample locations where average concentrations are within standards or below 100, but where greater than 10% of the samples making up that average exceed 200 colonies. The **lone purple square** represents a sample location that greatly exceeds both parts of the standard.



As we all know, the Stillaguamish river flows into Port Susan and Skagit Bay. A partner in our efforts, the Washington State Department of Health, uses additional fecal coliform criteria in marine waters to protect recreational and commercial shellfish harvest.

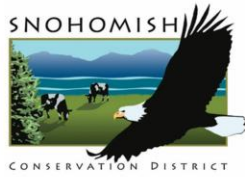
Port Susan and Skagit Bay were closed for commercial shellfish harvest in 1987 due to high bacteria levels. But today, as shown in green on this map, much of Skagit Bay and Port Susan are now open for harvest.

The shellfish you will enjoy today have come from approved locations.



To protect our gains, Snohomish County and partner agencies gather samples and analyze data to identify areas where focused source identification and correction is conducted. Focused source identification includes mapping, establishing more sample sites and using other indicators of poor water quality.

If sources are identified, projects to protect water quality such as septic system repairs and farm planning are implemented through **coordination with land owners** and partners such as the Snohomish Conservation District, Snohomish Health District, and Washington State Departments of Agriculture and Ecology.



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Stillaguamish
Tribe of Indians



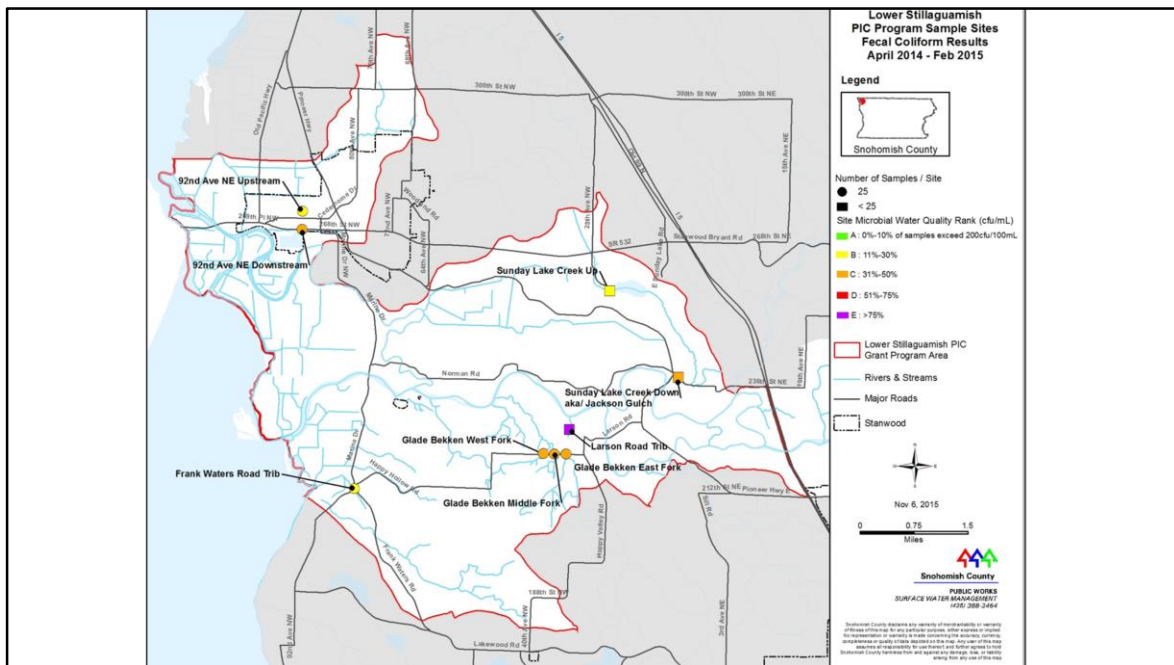
DEPARTMENT OF
ECOLOGY
State of Washington



Stillaguamish Clean Water District Advisory Board

Stillaguamish Flood Control District

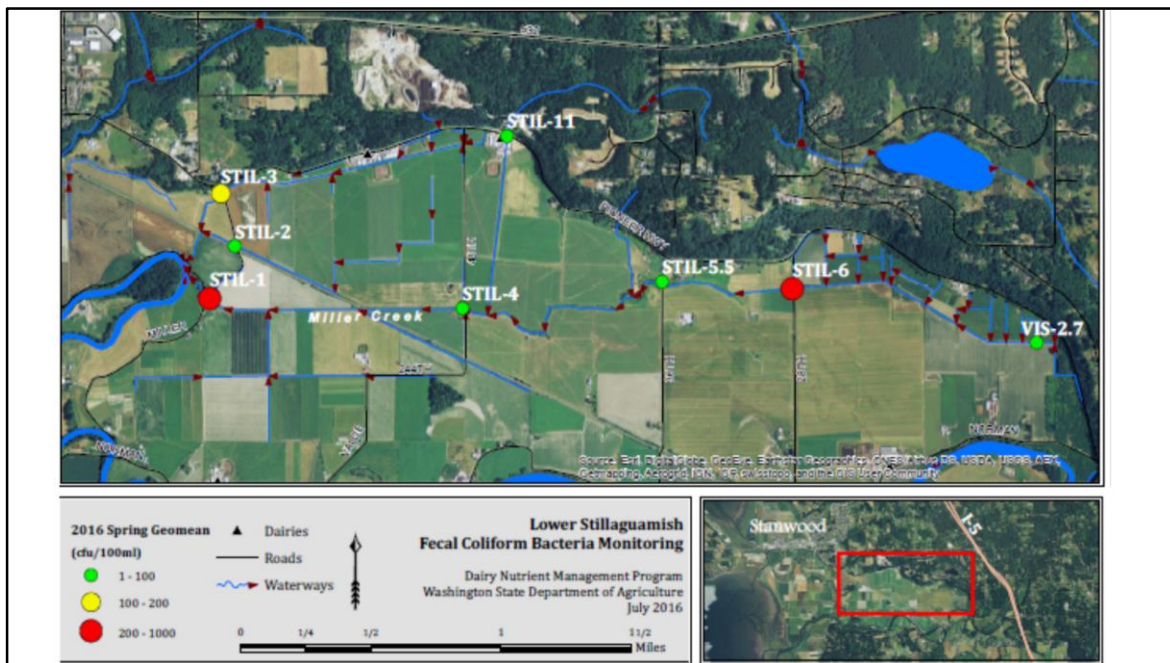
Using those results, in 2013 partner agencies were awarded a **Pollution Identification and Correction or "PIC" grant** from the Environmental Protection Agency and Department of Ecology to raise public awareness and to conduct monitoring to support the identification and correction of pollution sources in the Lower Stillaguamish basin.



The Lower Stillaguamish PIC program area is shown here in white with red boarder.

Funded by the grant, Snohomish County Surface Water Management established 9 monitoring sites focused on the uplands. Up to 25 samples were gathered at each site from April 2014 – February 2015.

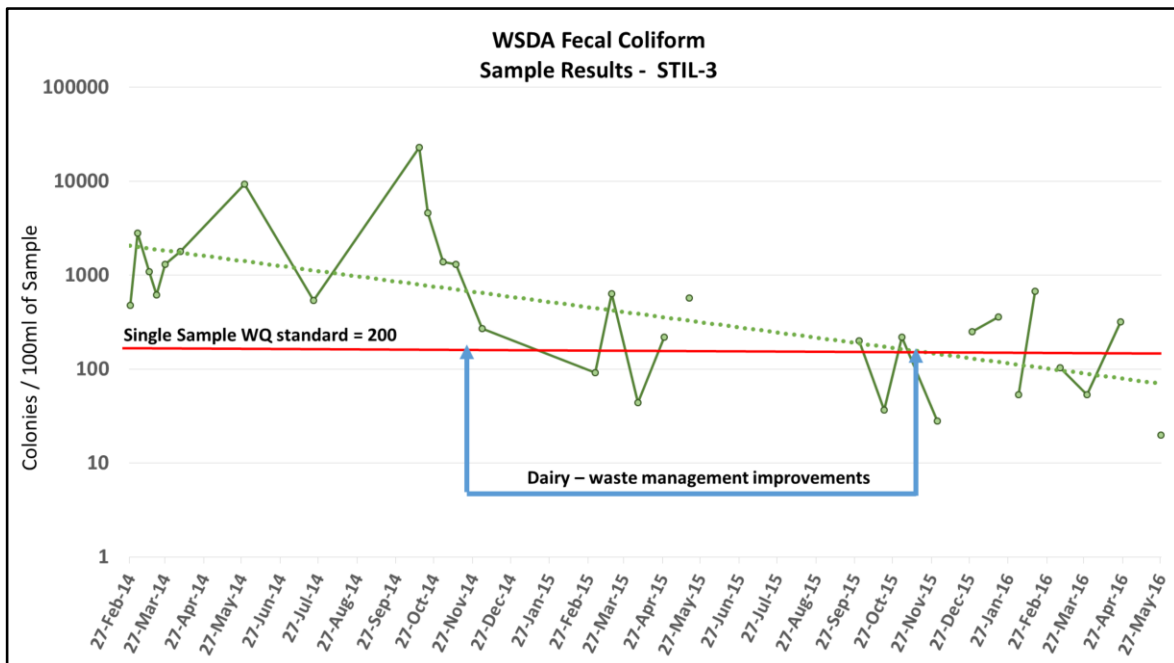
The map shows the Fecal coliform results using the same ranking process as shown previously. Results at the Larson Road site indicated that > 75% of samples exceeded water quality standards. Projects with landowners and partner agencies were undertaken to improve conditions. My colleague and PIC program manager Sean Edwards will provide detail in the next presentation.



Similarly, the WSDA established 8 monitoring sites under a PIC grant. Their locations focused on the lowlands or Miller Creek drainage portion of the Lower Stillaguamish basin as shown here.

The dots in this map represent average fecal coliform concentrations during spring of 2016. WSDA continues to conduct monitoring and provide local dairy producers with results and technical assistance to improve water quality.

This good work and improvements to dairy waste management upstream of site Stil-3 – have resulted in reductions of fecal coliform at that monitoring location.



This graph shows WSDA’s fecal coliform sample results for site Stil-3 from Feb 2014 – May 2016. In the beginning, we see spikes in fecal coliform bacteria far above the red line or state standard. Fecal coliform concentrations then drop as improvements are made to dairy waste management upstream between November 2014 and November 2015.

This is evidence that protection of water quality through coordination and landowner co-operation can make a difference.

Summary

- Fecal coliform bacteria are an indicator of other pollutants and viruses that can make people and animals sick
- The bacteria come from warm blooded animals
- We need your help to protect this vital resource – your surrounding waters

And now my colleague Sean Edwards and PIC program manager will highlight other PIC program achievements.